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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,976	01/09/2002	Bolesh J. Skutnik	BJA203A	6667

7590 05/28/2003
BOLESH J. SKUTNIK PhD, JD
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EXAMINER

VALENCIA, DANIEL E

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/042,976

Applicant(s)

SKUTNIK, BOLESH J.

Examiner

Daniel E Valencia

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 14-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Applicant's election with traverse of Group I in Paper No. 4 is acknowledged. The traversal is on the ground(s) that the method described in claims 14-20 make only the product described in the other group of claims. This is not found persuasive because the product being claimed broadly is defined allowing for alternate methods to be used. The requirement is still deemed proper and is therefore made FINAL.

Drawings

The drawings are objected to because they are informal and have handwritten numerals. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure, which is not enabling. A definition or description of the term "nanoporous" is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA

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1976). The claims and the disclosure do not make it clear as to what is meant by the term "nanoporous". The dimension corresponding to the prefix "nano" could be on the order of a tenth of a nanometer, a nanometer, tens of nanometers, hundreds of nanometers, etc.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Bruinsma U.S. Patent No. 5,922,299. Refer to the appropriate parts of the specification. Regarding claim 1, Bruinsma discloses an optical fiber having a light transmitting core and a nanoporous cladding (col. 2, lines 13-24 and abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 11, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruinsma in view of Sinofsky U.S. Patent No. 6,270,492 (submitted

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by applicant). Refer to the appropriate drawings or parts of the specification. Bruinsma as applied above, discloses an optical fiber with a nanoporous cladding; however, the reference does not disclose the specifics of the diffuser.

On the other hand, Sinofsky discloses the limitations that Bruinsma lacks. Specifically, Sinofsky discloses a diffuser that has light scattering compound (fig 2A) selected from the group in claim 4 (see table 1). Regarding claims 11 and 12, Sinofsky's disclosure shows that the diffuser (fig 1 and 2) is of a cylindrical shape and has a mirror (28) secured to a polished distal end. Sinofsky further discloses that the mirror is secured and produced by vapor deposition of a reflective metal (col. 9, lines 43-47), as explained in claim 13. Sinofsky teaches that it is advantageous to use an optical fiber or waveguide to deliver radiation to a targeted biological sight (col. 1, lines 17 and 18), in order to treat disease and tumorous tissue (col. 1, lines 20-35). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the fiber disclosed by Bruinsma in the type of diffuser disclosed by Sinofsky.

Claims 2 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruinsma in view of Doiron U.S. Patent No. 5,269,777 (submitted by applicant). Refer to the appropriate drawings or parts of the specification. Bruinsma as applied above, discloses an optical fiber with a nanoporous cladding; however, the reference does not disclose the specifics of the diffuser.

On the other hand, Dorion discloses the limitations that Bruinsma lacks. Specifically, Dorion's diffuser (fig. 2) shows that the end is consolidated (21) and the cladding has been treated with light scattering compounds (16), as mentioned in claims 2 and 5. With reference to claim 6, Dorion also shows that the light scattering compound is radially distributed. Dorion teaches that it is advantageous to have a consolidated end of the diffuser, because it allows for easy insertion into the body (col. 4, lines 35-50). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to consolidate the end of the diffuser tip.

Although Dorion does not explicitly state that the consolidated tip is formed by a fiber heat energy, this limitation of claim 2 does not result in a structure that is readily discernible from the device disclosed in the by the prior art (Dorion) and the structure being claimed is therefore completely met by the reference. Applicant is claiming structure, not method, and the USPTO bears a lesser burden when method-related limitations result in structure that cannot be readily discerned from structure not having such method-related limitations. (See MPEP 2113.)

Although Dorion does not explicitly state that the fiber has a graded or step index refraction distribution as mentioned in claims 7 and 8, this feature is well known in the fiber optic art and does not further limit the scope of the invention, therefore it would have been obvious to one of ordinary skill in the art.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruinsma and Dorion in view of Mori U.S. Patent No. 4,678,279. Refer to the

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appropriate drawings or parts of the specification. Bruinsma and Dorion as applied above, disclose an optical fiber diffuser with a core and a nanoporous cladding, wherein the cladding is consolidated at a distal end. However the combination of references does not mention that the distal end can be of spiral shape or have one or more rings.

On the other hand, Mori discloses both of these limitations. Specifically, Mori discloses that the diffuser can have spiral (fig. 1 and 2) or circular (fig 7) rings as mentioned in claims 9 and 10. Mori teaches that these features are advantageous, because the walls of the grooves reflect the light conducted through the fiber diffuser in order to radiate the light (col. 1, line 55- col. 2, line4). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use spiral or circular grooves on the diffuser disclosed by Bruinsma and Dorion.

Conclusion

The prior art documents submitted by the applicant in the Information Disclosure Statement filed on January 9, 2002, have all been considered and made of record (note attached copy of form PTO-1449).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brown U.S. Patent No. 5,292,320 discloses a radial medical laser delivery device that uses an optical fiber and a spirally shaped cladding.

Bhandarkar U.S. Patent Application Publication No. 2002/0152771 discloses a method of manufacture of silica bodies using sol-gel techniques, wherein the method can be used to form porous claddings on fibers.

Jaduszliwer U.S. Patent No. 5,747,348 discloses a diode laser integrated fiber optic hydrazine-fuel sensor with a porous cladding.

Ortabasi U.S. Patent No. 5,098,178 discloses a superconducting matrix, wherein the cladding of an optical fiber is a porous material.

Yagi U.S. Patent No. 5,169,421 discloses a method of manufacturing a silica glass optical waveguide perform, wherein the cladding is formed of a porous material.

Culver U.S. Patent No. 5,923,694 discloses a wedge side pumping for a fiber laser having a cladding that is porous.

Fleming U.S. Patent No. 5,279,633 discloses a method of making a fiber with a porous cladding using sol-gel methods.

Dawnay et al. "Growth and characterization of semiconductor nanoparticles in porous sol-gel films" teaches a method of forming a nanoporous cladding for fibers and waveguides.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel E Valencia whose telephone number is (703)-305-4399. The examiner can normally be reached on Monday-Friday 9:30-6:00.

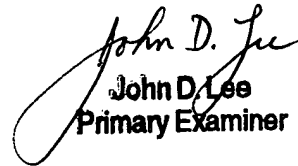
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The fax phone numbers for the organization where this application or proceeding is assigned are (703)-308-7724 for regular communications and (703)-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0956.

A handwritten signature in black ink, appearing to be "dv", written in a cursive style.

dv
May 22, 2003

A handwritten signature in black ink, appearing to be "John D. Lee", written in a cursive style.
John D. Lee
Primary Examiner